

REMARKS

Claims 12-16 and 21-24 are pending in the present application. All of which stand under final rejection. In conjunction with the present RCE, claim 12 is amended. The present amendments recite elements depicted in FIG. 39 of the original application and, therefore, do not improperly introduce new subject matter. The recited "longitudinal direction with respect to the major surface of the semiconductor substrate" is the substantially vertical direction as depicted in FIG. 39.

As recited in the claim, the lower electrodes "extend up to a vertical position substantially identical to that of said upper surface of said insulating film"; thus, they do not protrude from the upper surface of the insulating film which makes it easier to planarize the interlayer insulating film formed above the lower electrodes. As amended, the claim recites a semiconductor device in which degradation of the device characteristics can more effectively be suppressed as compared with the device of the Gonzalez reference (US 5,208,280). Particularly, when the shape of the capacitor lower electrode is widening upward as disclosed by the Gonzalez reference, the size of the lower portion of the capacitor lower electrode becomes smaller than the size of the upwardly widening portion. Accordingly, as the size of the semiconductor device is further reduced, it becomes more difficult to ensure a contact area between the lower portion of the capacitor lower electrode and the conductive plug positioned below the capacitor lower electrode. This may cause degradation of device characteristics (for example, data writing characteristics) as the electrical resistance at the contact portion increases. By contrast, the semiconductor device according to amended claim 12 (by reciting a particular shape of the lower electrodes and a specific cross-section of the sidewalls) includes a capacitor lower electrode having a cylindrical shape with the size at its upper portion is substantially the same as the size at

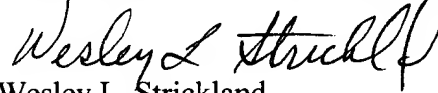
its lower portion, thereby, alleviating, or significantly, reducing, the above-identified problems.

SUMMARY

Applicant believes that the present amendments places all claims in condition for allowance and passage of this case to issue is respectfully requested.

Respectfully submitted,

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